

Digitalisation for Agriculture

Module 2.1: Mapping the Sub-sectors

Agenda

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- Advisory and information services;
- Market linkages;
- Supply chain management;
- Macro-agricultural intelligence;
- Financial access.

Advisory & information services

Definitions

- Digitally delivered information on topics such as **agronomic best practices**, **pests** and **diseases**, **weather** and **market prices**

→ More sophisticated digital advisory services and farm management software tailored to the specific farmer, farm or field that enable smallholder farmers to make decisions that **maximise output** from their land, **improve the quality** of agricultural production and **maximise farm revenues** and profits

- Thanks to **lower costs of production**, improved **ability to identify markets** and/or **better farm gate price**

Advisory & information services

Examples of solutions

- Applications providing access to **good practices**
- **Market information systems** and services
 - Agriculture input, crop/livestock price intelligence
- **Early warning tools** for weather/climate advisory or pest/disease control
- Customised (**precision**) **advisory services** at the level of farmer, farm or specific field
- **Participatory platforms** (e.g. peer-to-peer smallholder communities, curated farmer videos)
- Livestock and **farm management** software

Market linkages

Definitions

Digitally-enabled solutions to **link smallholder farmers** to:

- high-quality **farm inputs** (e.g., seeds, fertilisers, herbicides/pesticides)
- production and post-harvest **machinery** and mechanisation **services** (e.g., irrigation, tractors, cold storage)
- **off-take markets**, including agro-dealers, wholesalers, retailers, or even to end-consumers.

→ Digital market linkage solutions allow smallholder farmers to **lower their costs of production** via access to lower-cost and/or higher-quality inputs, **reduce the costs and risks** of finding and transacting with buyers and ultimately **increase their yields and incomes**.

Market linkages

Examples of solutions

- Linkage to **agri-inputs**
 - Digitally-enabled input distribution, online input marketplaces, etc.
- **Mechanisation** linkage **platforms**
 - Shared economy for mechanisation, pay-as-you-go irrigation, etc.
- Linkage to **market access**
 - Digitally enabled linkages to wholesale buyers
- **End-to-end** integrated market linkage models
 - Digital linkage to both inputs and markets
- Ag buyer-seller digital **marketplaces/exchanges**

Supply chain management

Definitions

- Digital supply chain management solutions are **business-to-business services** that help agribusinesses, cooperatives, nucleus farms, input agro-dealers and other smallholder farmer value chain intermediaries to **manage their relationships with smallholder**
 - Lower costs through greater **efficiency**,
 - Improve value chain **quality** through better **traceability** and **accountability**
 - Increase smallholder **farmer yields and incomes** by making it easier for more commercial players to formally engage with large numbers of smallholder farmers.

Supply chain management

Examples of solutions

- **Traceability** solutions
 - Digital sustainability and organic product certification tracking
- **ERP** (Enterprise Resource Planning) platforms for smallholder farmer cooperatives, nucleus farms, agribusiness out-grower schemes
- Digital **quality assurance solutions** for farm inputs and produce
- **Logistics management solutions** for post-harvest cold chains, storage and transport



Supply chain management

Consumer protection starts here

EU food safety policy and action:

- **Food hygiene:** food businesses, from farms to restaurants, must comply with EU food law, including those importing food to the EU.
- **Animal health:** sanitary controls and measures for pets, farmed animals and wildlife monitor and manage diseases, and trace the movement of all farm animals.
- **Plant health:** detection and eradication of **pests** at an early stage prevents spreading and ensures healthy seeds.
- **Contaminants and residues:** monitoring keeps contaminants away from food and animal feed. Maximum acceptable limits apply to domestic and imported food and feed products.



Macro-agricultural intelligence

Definitions

- **Data analytics** solutions and digital **decision support** tools that integrate a variety of data sources on smallholder farmers, farms and markets and convert this information into useful country- and value-chain level **insights** and **decision tools** for government policymakers, extension agencies, agronomists, agribusinesses and investors.

Macro-agricultural intelligence

Examples of solutions

- Government **agriculture sector tracking** dashboards
- Agriculture **extension system management** tools
- Agribusiness and agriculture **investor** national and regional **intelligence systems**
- **Agronomy/R&D agenda** setting digital tools
- **Weather and climate observatories** for agriculture

Financial access

Definitions

- Digital financial services (DFS) relevant for smallholder farmers, such as **digital payments**, **savings**, smallholder **credit**, and **agricultural insurance**, which increase financial access and equip smallholder farmers to improve yields and incomes and invest in the longer-term growth of their farms
- Includes business-to-business digitalisation and data analytics services for **financial institutions** that enable such institutions to serve smallholder farmers at substantially lower cost and risk.

Financial access

Examples of solutions

- Agronomic/livestock management **good practices**
- Smallholder farmer **payment solutions**
 - Agribiz to farmer, government to farmer, farmer to input supplier, etc.
- Digital **agri-wallets** and commitment savings systems
- Smallholder credit
 - Digital credit assessment/delivery/collection platforms and products
- Smallholder **insurance**
 - Digitally-enabled index weather, precipitation, pest insurance
- **Crowdfunding platforms** for smallholder farming
- **Business-to-business FinTech** data analytics intermediaries (e.g. digital credit profiles)

Financial access

Examples of solutions: Bulambuli Valley Crowdfunding

